
Space Weather Forecast

Issued on Saturday, 05 February 2022 at 01:14 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales <https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales>

Space Weather Forecast Headline: Chance of Moderate flares throughout. Chance of isolated Minor Storm activity today (05 February).

Analysis of Space Weather Activity over past 24 hours

Solar Activity: There are currently five numbered sunspot regions. Solar activity was low, with a number of Common class flares observed. The majority of the flares were from AR2936, a large, complex and mature region nearing the northwestern limb. The largest flare was long duration, peaking at 04/1551 UTC. A CME was generated from this event, and is yet to be analysed but is currently thought unlikely to be Earth directed due to its location near the northwest limb. AR2938 remains a small and simple group. AR2939, AR2940 and AR2941 are generally large or elongated regions, with moderate magnetic complexity

Solar Wind / Geomagnetic Activity: The solar wind has been elevated through most of the last 24 hours, under the residual influence of a CME which arrived on 01 February and has resulted in periods of moderate magnetic field strength. The north-south component of the solar wind started and ended the day weakly negative, but was moderately negative from 04/0400UTC and then for most of the rest of the day. These observations suggest that the Earth was under the influence of a passing CME. Geomagnetic activity was Unsettled to Active, but with Minor storm conditions 04/1500-2100 UTC.

Energetic Particles / Solar Radiation: The count of energetic particles (high energy protons) was at background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be mainly low, with a chance of moderate class flares and a very slight chance of strong flares.

Solar Wind / Geomagnetic Activity: Solar winds are likely to start at slightly elevated levels, but then increase through today to become elevated again as a coronal hole high influence arrives, with further coronal hole influence anticipated day 2 (6th). Activity is expected to be Unsettled to Active today, tomorrow and day 3 (7th) but with isolated Minor Storm intervals likely today, reducing to a chance tomorrow and a slight chance for day 3. Day 4 (8th) activity is expected to return to Quiet to Unsettled conditions.

Energetic Particles / Solar Radiation: The count of energetic particles (high energy protons) is forecast to remain at background levels whilst the current sunspots remain quiet and stable, with no radiation storms currently expected.

Geomagnetic Storms:

Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	Yes	60	40	10	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 M Class	No	30	30	30	30
Very Active	R3 to R5 X	No	5	5	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms	Level (cm ⁻² sr ⁻¹ s ⁻¹)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = cm⁻²sr⁻¹s⁻¹)